



## Pulmonary Hypertension

### RIGHT VENTRICULAR TO LEFT VENTRICULAR RATIO IN SYSTOLE PREDICTS SEVERITY OF PULMONARY HYPERTENSION IN CHILDREN

ACC Moderated Poster Contributions

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**Background:** Pulmonary hypertension (PH) increases right ventricular (RV) pressure resulting in septal shift and RV dilation. This contributes to RV and left ventricular (LV) dysfunction. Echo is limited in its ability to determine PH severity. We correlated the ratio of RV to LV diameter in systole with invasive measures and predicted disease severity in children with PH.

**Methods:** 41 children with PH, median age 11.6yr, (1mo - 21yr), had 76 echos and cardiac cath within 48 hours. RV/LV was measured in the parasternal short axis in systole. Cath data included: systolic and mean pulmonary artery pressure (PAP), pulmonary vascular resistance (PVR), pulmonary capillary wedge pressure, right atrial pressure, and cardiac output. RV/LV was correlated against hemodynamic measures and predictive value evaluated using Receiver Operating Characteristic analysis to identify patients with  $\geq$  moderate PH (mean PAP  $\geq 35$ mmHg).

**Results:** RV/LV correlated significantly with mean PAP, systolic PAP, and PVR (see Figure). There was no significant correlation with pulmonary capillary wedge pressure, right atrial pressure, or cardiac output. RV/LV was a good predictor of moderate PH (area under the curve = 0.81; Cut-off value of 1.16 = sensitivity, 83%; specificity, 62%).

**Conclusion:** RV/LV ratio incorporates both pathologic septal shift and RV dilation in PH and correlates with invasive measures of severity. RV/LV ratio can easily be obtained in clinical setting and appears to be a strong predictor of moderate or greater PH.

